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1865.

attitude; as well as in the depressed, slender form of its abdomen and thorax, it seems to present decidedly the aspect of a *Macrural Decapod*. Yet, on a closer examination, we can see no traces of a carapace,—the thorax being apparently divided into seven segments, like those of the abdomen, and each provided with a pair of legs, as in the *Tetradecapoda*. If we are not mistaken in these latter characters, and we certainly believe we are not, it must show a most extraordinary union of characters, which, amongst recent crustacea, belong to different primary divisions. From all that can be made out of its structure, we are therefore inclined to view it as one of the “embryonic” or “comprehensive” types, so often met with in various departments of palæontology, and which furnish the advocates of the Darwinian hypothesis with some of their strongest arguments.

For the present, this genus is placed, provisionally, along with the *Tetradecapoda*, though it cannot, we think, be included in any known family of that division; while if it should prove to be an embryonic or low type of the *Decapoda*, it may be even necessary to establish for its reception, a division of more than family importance. It is proper to remark here, however, that we have not seen any one specimen showing the caudal appendages we have described, along with the other characters of the thoracic and cephalic members, mentioned above. One imperfect specimen shows the seven thoracic and five or six of the abdominal segments, with their legs and natatory appendages, the head, antennæ, and apparently their basal scales; while another shows the caudal appendages, and all of the thoracic and abdominal segments, very distinctly, without any of the other members. The general agreement, however, of these specimens, in the parts preserved in each, is such that scarcely a doubt can be entertained that they belong to the same species. Yet, in order to prevent confusion, we would remark, that in case they should prove to belong to different genera, or species, that it is the form showing the head, antennæ, thoracic and abdominal segments, with their appendages, &c., that we regard as the type of the genus.

PALÆOCARIS TYPUS, M. & W.

Linear, with thorax slightly wider near the middle than the abdomen; thoracic and abdominal segments of nearly equal length. Inner antennæ equalling the length of the head and thorax; peduncles stout, first joint a little longer and wider than either of the other two, which are of nearly equal length, and minutely and closely setigerous on their inner margins; flagellum very slender, and minutely jointed; accessory appendage nearly or quite as long as the flagellum, and scarcely differing from it otherwise. Outer antennæ possibly a little longer than the others, peduncles slightly longer than those of the other pair, and like them minutely setigerous in front; basal scales (?) oblong, about as long as first joint of peduncles, squarely truncated. Thoracic legs slender and long, anterior ones apparently not longer or larger than the others, none of them (so far as can be seen) chelate, or with any of the segments enlarged; all the others with the first two or three joints very short; fourth? joint horizontally extended, tapering, and about as long as four segments of the body; succeeding joints (in the specimen examined) very slender and abruptly bent downwards and backwards. Natatory abdominal appendages acutely lancelinear, and some of them as long as four of the abdominal segments. Telson nearly as broad at the base as the penultimate segment, tapering, and as long as two and a half of the abdominal segments; minutely setigerous on each side. Stylets, with first joint very minute; second with each division as long as the telson, and lancelinear in form, with pointed extremities, and parallel, more or less setigerous margins.

Length of head, thorax, and first six abdominal segments, 0·78 inch; do. of head, 0·12 inch; do. of the seven thoracic segments, 0·35 inch; do. of 1865.]

the first six abdominal segments, about 0.31. Length of telson, about 0.14 inch; do. of stylets, near 0.13 inch. Length of lower or outer antennæ, not less than 0.38 inch, (probably more), of which the peduncle forms 0.15 inch; do. of inner, near 0.40 inch. Breadth of thorax, 0.13 inch.

DECAPODA.

MACRURA.

? Genus *ANTHRAPALÆMON*, Salter, 1861.

The genus *Anthrapalæmon* was proposed by Mr. Salter in the *Quarterly Journal of the Geological Society of London*, vol. xvii., p. 529, for the reception of a Crustacean from the Coal Measures of Scotland. His description of the genus reads as follows:—

"Carapace scarcely so broad as long, (except when crushed flat), simple, flatter than semicylindrical, the sides a little arched outwards. A strong central ridge in front, projecting as a thick (serrate?) spine is separated by a concave space, or slight furrow, from a posterior central ridge, which only occupies (in the type species, *Grossarii*) a small portion of the length. Front margin serrated. The outer antennæ have wide, square basal joints, apparently *without any advantage*;* the 2d and 3d joints not much oblique; the rest about as broad as long. Abdomen as broad as long, of six joints (besides the telson), broad and very short; the pleuræ, except the 2d, pointed. Telson very broad; appendages to the penultimate joint, double on each side, subtrigonal, broad."

The name *Anthrapalæmon* was proposed from its supposed affinities to the recent genus *Palæmon*, but Prof. Dana thinks it more nearly related to *Æglea* and *Galathea*.

ANTHRAPALÆMON GRACILIS, M. & W.

It is with considerable doubt that we venture to refer this species to Mr. Salter's genus, the only specimen we have seen being imperfect, and not in a condition to show the more important characters. In form and general appearance, however, as well as in such of its details as can be made out, it seems to agree well with that genus. The specimen consists of the abdomen and caudal appendages, (in a crushed condition), and an impression in the matrix of the under side of the carapace, the outer pair of antennæ, and apparently of the eyes. The carapace, as seen from above, presents nearly an oblong form, excepting that the lateral margins are moderately convex in outline; the two extremities are truncated, and the breadth nearly or quite equalling three-fourths the length. Its lateral margins, in front of the middle, are each finely serrated by six small, sharp, projecting points as in the type of the genus, excepting that they are sharper, and directed more obliquely forward. At each antero-lateral angle, there is also a considerably larger projecting point, forming a short spine, exactly as in the type of the genus, excepting that it is extended more nearly directly forward. The outer pair of antennæ are moderately stout; each peduncle showing three joints, diminishing rather gradually in size, the first longer than wide, and the other two apparently of nearly equal length and breadth, and obliquely articulated. The flagellum is narrower at its base than the last joint of the peduncle, and composed of very short segments, which are scarcely more than one third as long as wide. The entire length of the antennæ cannot be determined, as neither flagellum is entire in the specimen examined, but as the portion remaining tapers very gradually, they were probably rather long. They are both, in the specimen examined, deflected abruptly outwards, nearly at right angles to the longer diameter of the carapace, which would seem from the

*Is not this a misprint of the word *appendage*?

oblique articulation of the second and third joints of the peduncles, to be their natural position. (Inner antennæ unknown.)

Immediately between the bases of the two outer antennæ, the specimen shows what appear to be impressions of the two globose eyes, which with their peduncles extend forward about two-thirds as far as the peduncles of the antennæ. These may possibly be the peduncles of the inner antennæ; but they look very much like globular eyes, on more slender peduncles.

The abdomen is more than half the length, and about two-thirds the breadth, of the widest part of the carapace. It shows five short segments, and apparently part of another, the first of which is a little smaller, and the second a little larger than the others. None of them, however, are more than one-fifth as long as the breadth of the abdomen.

The caudal appendages being unfortunately bent down and crushed, it is not possible to make out the form of the telson or the details of the other parts, though the whole together seem to have been wider than the abdomen, and as wide as the carapace. No surface sculpturing can be clearly made out, though there is some appearance of a few irregular scattering granules near the margins of the carapace. (Other parts unknown.)

Entire length, from the stalked eyes? to the extremity of the caudal appendages, about 1.13 inches; length of carapace, 0.63 inch; breadth of do. near the middle, 0.45 inch; at the extremities 0.31 inch; length of abdomen, 0.30 inch; breadth of do. near the middle, 0.26 inch. Length of peduncles of the antennæ 0.15 inch; do. of eyes? and their peduncles, 0.13 inch.

It will be observed from the foregoing description that our specimen shows no traces of the central spine or beak, extending forward from the anterior extremity of the carapace, nor of the longitudinal carina connected with it, which constitutes such a marked feature in *Anthrapalæmon*. It is possible, however, that this character may have been obliterated in breaking open the concretion, since our specimen only shows an impression of the under side of the carapace, while the appendage alluded to projects forward from the upper side, and may consequently be embedded in the other half of the concretion, which we have been unable to obtain. Still as it is possible that this appendage may be wanting in our fossil, we should not be surprised if it would prove to belong to an allied but distinct genus.

Specifically at least, it differs from *A. Grossartii*, of Salter, in the proportionally much shorter joints of the flagella of its outer antennæ, and the oblique articulations of the segments of their peduncles; while the latter, as well as the surface of other parts, are without any traces of the fine pitting represented by Mr. Salter's figures. Our specimen also shows traces of what appear to be squarely truncated basal scales to the outer antennæ, about as long as their first joints, while Mr. Salter's figure (1), represents apparently a triangular scale over the left antenna.

Length from the end of the caudal extremity, to the anterior margin of the carapace, 1 inch. Length of carapace, 0.60 inch; breadth of do. 0.43 inch. Length of abdomen, about 0.30 inch; breadth of do. 0.27 inch. Length of caudal appendages, 0.10 inch.

MYRIAPODA.

? Genus ANTHRACERPES, Meek & Worthen.

ANTHRACERPES TYPUS, M. & W.

This genus and species are founded upon a slender worm-like fossil, the relations of which have not been very clearly determined. The specimen consists of a well defined mould or impression left in a concretion, and measures 1.50 inches in length, and about 0.09 inch in breadth, (height) as seen lying upon one side. It is regularly arched from end to end, so as to form about one-third of a circle of 0.65 inch radius. For most of its length, it is 1865.]

of very uniform breadth or height, but it tapers very gradually towards what appears to be the posterior end, where the last segment terminates in three or four short, slender, spine-like appendages, directed backwards on a line with the general curve of the body. The other end being broken away in the only specimen yet known, the nature of the head and its appendages cannot be determined.

The entire body is distinctly articulated, and shows clearly nineteen segments, and part of another. The segments are of nearly uniform size, or only vary from 0.08 to 0.10 inch in length; the last one, however, has only a breadth or height of about 0.03 inch, and the next about twice that. Crossing the segments near the upper side, may be seen in the mould an undefined furrow, (produced by a ridge in the fossil itself) which bends downwards and then up again as it passes across from side to side of each segment. Anteriorly it is less distinct and placed very near the dorsal margin, but in tracing it backwards it is found to descend and become more defined, until it reaches the fourth segment from the extremity; on this it passes obliquely downward to its posterior inferior corner, so as not to be seen on any of the succeeding divisions behind. Below the middle of each segment, there is in the mould a small prominence, evidently marking the position of a corresponding pit in the fossil. These agree in position and appearance with the spiracles or breathing apertures in the *Myriapoda*. We have not been able to make out very clearly, any indications of feet or other appendages; though there is near the base of each segment of the mould, a short oblique impression, that may possibly have been left by very small feeble legs folded backwards.

As this fossil shows too many segments for a larval insect, and has not the aspect of an *Annelid*, we are rather inclined to view it as a *Myriapod*.

INSECTA.

LEPIDOPTERA.

Genus *PALÆOCAMPA*, Meek and Worthen.

PALÆOCAMPA ANTHRAX, M. & W.

The fossil for which the above generic name is proposed, is about 0.70 inch in length, and some 0.13 inch in breadth, exclusive of the projecting tufts of hairs. It is an arcuate, worm-like body, that has been divided or split lengthwise in breaking open the concretion in which it is enveloped; so that it is only a longitudinal section we see in looking at either half of the concretion. At both extremities, and along the upper or convex side of the curve, we observe densely packed tufts or fascicles of hairs individually radiating, as if from small wart-like protuberances. These hairs are straight, and about 0.30 inch in length. At one extremity, which appears to be the anterior, two of the bundles of hairs are more radiating than the others, and directed forward. The bundles distributed over the curved or dorsal side are regularly arranged, and have each a general direction at right angles from the part of the arched side from which they spring. At the posterior extremity there are also two tufts directed backwards, the individual hairs of which are less radiating than those at the other extremity. Between some of the bundles ranged along the upper side, some shorter tufts are seen, which appear as if they originate in another series of protuberances farther over on the other side embedded in the matrix. If we suppose each of these principal bundles along the curved side, and the two bundles at either end to each belong to a single segment, it would make about ten or eleven segments to the entire body.

The specimen is not in a condition to show the head or feet; yet we are strongly inclined to believe from its form, and peculiar regularly arranged bundles of hairs, that it is a *CATERPILLAR*. If we are right in this suggestion,

[Mar.

its discovery is certainly an interesting one, as it would present an evidence of the existence of *Lepidopterous* Insects, at a much earlier period in our world's history than has hitherto been suspected.

As this fossil will doubtless be met with in the Coal Measures at other localities, whether or not its connection with the mature Butterfly or Moth can ever be positively established, it seems desirable, for convenience of reference, that it should receive a name; although we are unable to point out any well defined characters from the only specimen seen, by which it can be distinguished from the larva of several existing types. That there is any probability, however, of its belonging to any existing genus, will, we think, not be maintained by any person familiar with the range of generic types in time.

April 4th.

Vice-President, CASSIN, in the Chair.

Twenty-two members present.

The following paper was presented and referred to a Committee:

"Diagnoses Specierum et varietatum novarum Molluscorum," etc.
By Philip P. Carpenter.

April 11th.

The President, DR. BRIDGES, in the Chair.

Twenty-five members present.

The following were presented and referred to a Committee:

"Synopsis of the genus *Pomoxys*," "On the genus *Caulolatilus*," "On the cranial characteristics of *Gadus proximus*," and "Note on several genera of Cyprinoids." By Theo. Gill.

The Curators exhibited a large living specimen of the Great Crab-Spider, *Mygale cancerides*, recently brought from Brazil, and presented by Mr. Newton.

The Secretary announced the death, on the 30th ult., of Major Charles I. Maceuen, late a member of the Academy.

April 18th.

The President, DR. BRIDGES, in the Chair.

Twenty members present.

The following papers were presented and referred to Committees:

"Observations on the Eocene Lignite Formation of the United States," and "Catalogue of the Eocene Annelides, etc." By T. A. Conrad.

"Descriptions of three new species of Exotic Uniones." By Isaac Lea.

The Secretary read the following:

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